

## CLAIMS

1. A method for decoding at least one signal transmitted by means of at least one antenna and received by means of at least one antenna, which method includes a symbol decoding step for producing at least one estimated symbol representative of at least one transmitted symbol carried by the received signal,

method characterized in that the symbol decoding step is executed by producing an estimation of at least one symbol with respect to which estimation the transmitted symbol features a minimum mean square error.

2. A method as claimed in claim 1, in which the symbol decoding step is further intended to provide likelihood output values intended to be used in the course of execution of a bit decoding step, which bit decoding step is intended to provide bit likelihood values intended to be used in the course of execution of the symbol decoding step as *a priori* likelihood input values.

3. A method as claimed in claim 2, in which *a priori* likelihood input values related to a given transmitted symbol are not used for producing an estimation of said given transmitted symbol.

4. A method as claimed in claim 2, in which an *a priori* likelihood input value related to a given bit forming part of a given transmitted symbol is not used for producing an estimation of said given transmitted symbol.

5. A device for decoding at least one signal transmitted by means of at least one antenna and received by means of at least one antenna, which device includes a symbol decoder intended to produce at least one estimated symbol representative of at least one transmitted symbol carried by the received signal,

device characterized in that the symbol decoder is intended to produce an estimation of at least one symbol with respect to which the transmitted symbol features a minimum mean square error.

6. A device as claimed in claim 5, in which the symbol decoder is further intended to provide likelihood output values intended to be used by a bit decoder, which bit decoder is intended to provide bit likelihood values intended to be used by the symbol decoder as *a priori* likelihood input values.

7. A device as claimed in claim 6, in which the symbol decoder includes filtering means intended to selectively discard *a priori* likelihood input values related to a given transmitted symbol when producing an estimation of said given transmitted symbol.

8. A device as claimed in claim 6, in which the symbol decoder includes filtering means intended to selectively discard any *a priori* likelihood input value related to a given bit forming part of a given transmitted symbol when producing an estimation of said given transmitted symbol.

9. A telecommunication system including at least one transmitter intended to output at least one signal transmitted by means of at least one antenna, and at least one receiver intended to receive said signal by means of at least one antenna, telecommunication system in which the receiver is a device according to claim 6.